



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In application of:

Mamoru NAKASUJI, et al.

ATTN: Box Missing Parts

Serial No.: 09/891,511

Group Art Unit: Unknown

Filed: June 27, 2001

Examiner: Unknown

For: INSPECTION SYSTEM BY CHARGED PARTICLE BEAM AND METHOD OF MANUFACTURING DEVICES USING THE SYSTEM

PRELIMINARY AMENDMENT

Commissioner for Patents  
Washington, D.C. 20231

Date: October 22, 2001

Sir:

Prior to calculation of the filing fee and examination of this application, please amend the above-identified application as follows:

10/22/2001 PRELIMINARY AMENDMENT  
01 FCI 01 10/22/2001  
02 FCI 02 10/22/2001  
03 FCI 03 10/22/2001  
04 FCI 04 10/22/2001

IN THE CLAIMS:

Please amend claims 16, 25, 30, 44-49, 54 and 59 as follows:

16. (Amended) A method of manufacturing a device comprising the steps of:  
detecting defects on a wafer using an inspection apparatus according to any one of claims 1 to 5 in the middle of a process or subsequent to the process.

25. (Amended) A defect inspection apparatus using the E x B separator defined by any of claims 21 to 23, in which:

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01 FCI 01 10/22/2001 10/22/2001  
02 FCI 02 10/22/2001 10/22/2001  
03 FCI 03 10/22/2001 10/22/2001  
04 FCI 04 10/22/2001 10/22/2001

10/22/2001 PRELIMINARY AMENDMENT  
01 FCI 01 10/22/2001  
02 FCI 02 10/22/2001  
03 FCI 03 10/22/2001  
04 FCI 04 10/22/2001

either one of said first charged particle beam or said second charged particle beam is a primary sample to be inspected, and the other is a secondary charged particle beam generated from said sample by the irradiation of said primary charged particle beam.

30. (Amended) A method for manufacturing a device using an inspection apparatus defined by any one of claims 26 or 27, in which a pattern inspection is performed in the device manufacturing processes.

44. (Amended) A charged particle beam apparatus in accordance with either of claim 41 or 42, in which said dividers are arranged in two locations in the proximity of the charged particle beam irradiating location and the proximity of the hydrostatic bearing.

45. (Amended) A charged particle beam apparatus in accordance with either of claim 41 or 42, in which the gas supplied to the hydrostatic bearing of said stage is nitrogen or an inert gas.

46. (Amended) A charged particle beam apparatus in accordance with either of claim 41 or 42, in which a surface treatment is applied to at least the surface of a part facing the hydrostatic bearing in said XY stage so as to reduce the amount of gas to be desorbed.

47. (Amended) A wafer defect inspection apparatus for inspecting the surface of a wafer for defects by using the apparatus disclosed in either of claim 41 or 42.

48. (Amended) An exposing apparatus for delineating the circuit pattern of a semiconductor device on the surface of a semiconductor wafer or a reticle by using the apparatus disclosed in either of claim 41 or 42.

49. (Amended) A semiconductor manufacturing method for manufacturing a semiconductor by using the apparatus disclosed in either of claim 41 or 42.

54. (Amended) A semiconductor manufacturing method including a process for inspecting a finished wafer or a wafer under processing for defects by using an inspection apparatus in accordance with any of claims 50 to 52.

59. (Amended) A semiconductor manufacturing method for manufacturing a semiconductor by using the apparatus in accordance with either of claims 55 or 56.

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**  
**U.S. Serial No. 09/891,511**

**IN THE CLAIMS:**

Claims 16, 25, 30, 44-49, 54 and 59 have been amended as follows:

16. (Amended) A method of manufacturing a device comprising the steps of:  
detecting defects on a wafer using an inspection apparatus according to any one of claims 1 to ~~15~~ 5 in the middle of a process or subsequent to the process.

25. (Amended) A defect inspection apparatus using the E x B separator defined by any of claims 21 to ~~24~~ 23, in which:

either one of said first charged particle beam or said second charged particle beam is a primary sample to be inspected, and the other is a secondary charged particle beam generated from said sample by the irradiation of said primary charged particle beam.

30. (Amended) A method for manufacturing a device using an inspection apparatus defined by any one of claims 26 to ~~29~~ or 27, in which a pattern inspection is performed in the device manufacturing processes.

44. (Amended) A charged particle beam apparatus in accordance with either of claim 41 to ~~43~~ or 42, in which said dividers are arranged in two locations in the proximity of the charged particle beam irradiating location and the proximity of the hydrostatic bearing.

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**  
**U.S. Serial No. 09/891,511**

45. (Amended) A charged particle beam apparatus in accordance with ~~any~~ either of ~~claims claim 41 to 44 or 42~~, in which the gas supplied to the hydrostatic bearing of said stage is nitrogen or an inert gas.

46. (Amended) A charged particle beam apparatus in accordance with ~~any~~ either of ~~claims claim 41 to 45 or 42~~, in which a surface treatment is applied to at least the surface of a part facing the hydrostatic bearing in said XY stage so as to reduce the amount of gas to be desorbed.

47. (Amended) A wafer defect inspection apparatus for inspecting the surface of a wafer for defects by using the apparatus disclosed in ~~any~~ either of ~~claims claim 41 to 46 or 42~~.

48. (Amended) An exposing apparatus for delineating the circuit pattern of a semiconductor device on the surface of a semiconductor wafer or a reticle by using the apparatus disclosed in ~~any~~ either of ~~claims claim 41 to 46 or 42~~.

49. (Amended) A semiconductor manufacturing method for manufacturing a semiconductor by using the apparatus disclosed in ~~any~~ either of ~~claims claim 41 to 48 or 42~~.

54. (Amended) A semiconductor manufacturing method including a process for inspecting a finished wafer or ~~an~~ a wafer under processing for defects by using an inspection apparatus in accordance with any of claims 50 to ~~53~~ 52.

59. (Amended) A semiconductor manufacturing method for manufacturing a semiconductor by using the apparatus in accordance with either of claims 55 to ~~58~~ or 56.

Applicants: **Mamoru NAKASUJI, et al.**  
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**REMARKS**

Claims 16, 25, 30, 44-49, 54 and 59 have been amended. No new claims have been added. Claims 1-60 are pending.

A marked-up version of the changes made to the claims is enclosed herewith as "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

The above amendments to the claims have been made to correct the multiple dependency of the above-listed claims. It is respectfully submitted that purpose of the amendments incorporated herein are to better place the application in condition for examination.

In the event that any additional fees are due in connection with this paper, please charge our Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, WESTERMAN, HATTORI  
McLELAND & NAUGHTON, LLP



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Enclosures: Version With Markings to Show Changes Made  
Amendment Transmittal (w/ appropriate fees)

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WGK/sdj

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